

Claims:

1. Snap fastening for fast mounting of fittings such as socket wrench latches, swivel lever latches (10), hinge parts (80, 82) in openings (12, 14) in a thin wall (16, 50), comprising a head part (24) which is to be arranged on one, outer side (18) of the thin wall (16) and which overlaps the outer rim (20) of the opening, and a body part (26, 28, 30, 32) which proceeds from the head part (24) and projects through the opening in the mounted position, and holding elements (36) which project from the body part (26, 28, 30, 32) and are flexible in direction of its outer surface, the free end of these holding elements (36) being provided with a first inclined surface (19) (run-in bevel) such that the holding element (36) is pushed back in a spring-loaded manner by the opening edge and with a second inclined surface (38) (stop bevel) for supporting the body part without play on the rim or edge (40) of the opening of the other, inner side (42) of the thin wall (16), which second inclined surface (38) is substantially perpendicular to the first inclined surface (19), characterized in that the body part (26, 28, 30, 32) and holding element (36) and the spring (44) are separate parts.

2. Snap fastening according to claim 1, characterized in that supporting elements (46, 48, 94, 96) are provided for supporting the holding elements (36) after the fitting is mounted in the thin wall (16), these supporting elements (46, 48, 94, 96) being held or carried by the body part (26, 28, 30, 32).

3. Snap fastening according to claim 2, characterized in that two holding elements (36) which are arranged diametrically opposite from one another are supported by spring arrangements such as spiral springs (44) and/or wedge arrangements (94) such as a tapered-head screw (98).

4. Snap fastening according to one of claims 1 to 3, characterized in that the holding elements (36) are levers (236, 3236, 3836) which are arranged at a distance (A) from the thin wall (16) so as to be rotatable around an axis (60, 3860) extending parallel to the plane of the thin wall (16).

5. Snap fastening according to one of claims 1 or 3, characterized in that the holding elements are levers (436, 3636) which are arranged at a distance from the thin wall so as to be rotatable around an axis (3661) extending perpendicular to the plane of the thin wall.

6. Snap fastening according to one of claims 1 to 3, characterized in that the

holding elements (36, 336) are slides (56) which are arranged so as to be displaceable in a cylinder (54) that is parallel to the plane of the thin wall and is rectangular in cross section, which slides (56) are held against pressure spring force by a hook arrangement locking between the slides (56) or in the cylinder, or by friction forces, or by a pin.

7. Snap fastening according to claim 1, characterized in that the holding elements (3236; 3336, 3436) are plates which can be guided by means of inclined guide surfaces (3204, 3304, 3404) and which are moved toward the thin wall (16) during an outward movement.

8. Snap fastening according to claim 1, 2 or 6, characterized in that the holding element (4536) is a part which is flat in the movement direction, and a strip (4503) proceeds from one or both lateral edges of the part for improved guidance in the movement direction.

9. Snap fastening according to one of claims 1 to 8, characterized in that the holding element has a projection or recess (45; 4183, 4351, 4359, 4383) which cooperates with a recess or projection (3929; 4105, 4294, 4307) which determines the travel in the movement direction and which is carried or formed by the body part or cylinder (3926, 4126, 4226, 4313).

10. Snap fastening according to claim 1, 2 or 6, characterized in that the holding element (4136) has a substantially rectangular opening (4185) which extends in the movement direction and in which a spiral pressure spring (4144) is inserted.

11. Snap fastening according to claim 10, characterized in that the holding element (5436) is a part which is flat in the movement direction and which has a width that is less than the round diameter of the spring (5444).

12. Snap fastening according to claim 11, characterized in that the holding element (4736) holds a buckling spring (4744).

13. Snap fastening according to claim 10, characterized in that the channel receiving the holding element (4747) enters into a clamping engagement with a portion of the spring projecting out of the holding element (Fig. 45F).

14. Snap fastening according to claim 10, characterized in that the holding element (4936) has two lateral nests located across from one another for receiving one half of the width of the spring (4944), and the channel has a suitably dimensioned offset (4947) for

the rest of the spring width.

15. Snap fastening according to claim 10, characterized in that when two holding elements (5036) are arranged side by side these holding elements (5036) have projections (5015) at the transverse edges of the respective opening for receiving the spring (5044), which projections (5015) project into the other respective opening and form supporting surfaces for the spring (5044).

16. Snap fastening according to claim 10, characterized in that the holding element (5436) comprises an assembly of a first, a second, and possibly additional flat parts, each with a rectangular opening (4185), which have a common opening for receiving a spiral pressure spring (4144) in a flush manner in such a way that the spiral spring is pressed into the work position in the unloaded state.

17. Snap fastening according to claim 9, 10 or 11, characterized in that the holding element (4536) is a part which is flat in the movement direction and which has an opening (4683), and projections for orienting the spiral spring proceed from the side edges of the flat part which extend transverse to the movement direction.

18. Snap fastening according to claim 1, characterized in that the holding element (5136) is accommodated in a housing (5126) which, in turn, can be mounted in a thick wall.

19. Snap fastening according to claim 1, characterized in that the holding element (5336) has inclined surfaces (5319, 5338) having identical run-in and run-out angles and accordingly works as a ball catch.

20. Snap fastening according to claim 1, characterized in that the holding element (5436) in front of the run-in bevel (5419) forms a straight-line centering surface (5439).

21. Snap fastening according to claim 1, characterized in that the holding element (4336, 4436) forms projection surfaces, offset surfaces or threaded surfaces (4383) in which a tool such as a wrench or screwdriver blade (4301; 4402) can engage for displacing the holding element or holding elements into the pushed back position.

22. Snap fastening according to one of claims 1 to 6, characterized in that when the two diametrically oppositely arranged holding elements are loaded to different extents, such as when a sash (52) is used, the holding element (36) upon which the smaller load is exerted is made of flexible plastic such as polyamide and the other holding element (136),

upon which the greater load is exerted, is made of rigid material such as metal.

23. Snap fastening according to one of claims 1 to 3, characterized in that the holding elements (336) are slides comprising a rigid material such as metal which are arranged so as to be displaceable in a cylinder which is parallel to the plane of the thin wall and is rectangular in cross section and are held against pressure spring force (324) by a pin arrangement (92) that is arranged between the slides.

24. Snap fastening according to claim 23, characterized in that the pin arrangement comprises screws (27) that can be screwed (37) into the head part (382, Figs. 31A, B, C).

25. Snap fastening according to claim 23, characterized in that the screws (27) determine the extent of the movement of the holding elements (1136).

26. Snap fastening according to claims 6 to 20, characterized in that the body part (3726) or cylinder (54) has a partial dividing wall (358) or undercut or opening edge at which the slides (36, 336, 536, 636) or lever (3736) are supported axially by a shoulder (3751) or hook.

27. Snap fastening according to claims 1, 2, 3 or 6, characterized in that the holding elements are formed by displaceably supported slides (56) whose movement axis extends perpendicular to the longitudinal extension of the fitting.

28. Snap fastening according to claims 1, 2, 3 or 6, characterized in that the holding elements (5436) are formed by displaceably supported slides whose movement axis extends parallel to the longitudinal extension of the fitting.

29. Snap fastening according to claim 1 or 2, characterized in that the holding element (2636, 2736) is formed by a stamped part.

30. Snap fastening according to claim 1 or 2, characterized in that the head part has an offset (117) in the area of the holding element (2836) for receiving edge bulges (119).

31. Snap fastening according to claim 1 or 2, characterized in that two or more holding elements (3136, 3836) are arranged side by side.

32. Snap fastening according to claim 1, characterized in that the body part (26, 28, 30, 32) and head part (24) are injection molded to form one piece.

33. Snap fastening according to claim 1, characterized in that the body part and head part are two parts which are screwed together (Figs. 31A, B, C; Figs. 89A, B, C) or welded together (Figs. 72A, 72B, 72C) or snapped together.

34. Snap fastening according to one of claims 1 to 33, wherein the fitting is a swivel lever latch or a folding lever latch (10) for fastening in an elongated opening (12, 17, 14) or in two shorter rectangular openings (12, 14), wherein one opening (12) receives a lever bearing (66) and the other opening (14) receives a lever stop (170, 70), characterized in that at least one of the openings (12, 14) also serves to receive at least one body part (28, 128, 32) with holding elements according to one of the preceding claims 1 to 32.

35. Snap fastening according to claim 33, wherein the swivel lever latch or folding lever latch has a trough (24) for receiving the actuating lever (22) in a lockable manner, characterized in that the trough (24) forms the head part of one or two body parts with holding elements in the area of the lever bearing such as a drive shaft (66).

36. Snap fastening according to claim 33 or 34, wherein the swivel lever latch or folding lever latch (10) has a trough (24) for receiving the actuating lever (22) in a lockable manner, characterized in that the trough (24) forms the surface (74, 174) behind which the cam of a lever stop (70, 170) engages on the one hand and forms the head part of a body part with holding elements in the area of the lever stop on the other hand.

37. Snap fastening according to one of claims 1 to 32, wherein the fitting is a hinge part (80, 82).

38. Snap fastening according to one of claims 1 to 32, wherein the fitting is a bar guide (Fig. 55).

39. Snap fastening according to one of claims 1 to 32, wherein the fitting is a lock case (Fig. 60A).

40. Snap fastening according to one of claims 1 to 32, wherein the fitting is a grip pipe (Fig. 62A).

41. Snap fastening according to one of claims 1 to 32, wherein the fitting is a socket wrench bearing (Fig. 63).

42. Snap fastening according to one of claims 1 to 32, wherein the fitting is a sash latch (Fig. 70).

43. Snap fastening according to one of claims 1 to 32, wherein the fitting is a grip projection (Fig. 74).